



(19) Europäisches Patentamt  
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Office européen des brevets



(11) EP 0 842 865 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:  
20.05.1998 Bulletin 1998/21

(51) Int Cl. 6: B65D 71/50

(21) Application number: 97309042.6

(22) Date of filing: 11.11.1997

(84) Designated Contracting States:  
AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC  
NL PT SE

Designated Extension States:  
AL LT LV MK RO SI

(30) Priority: 13.11.1996 US 747621

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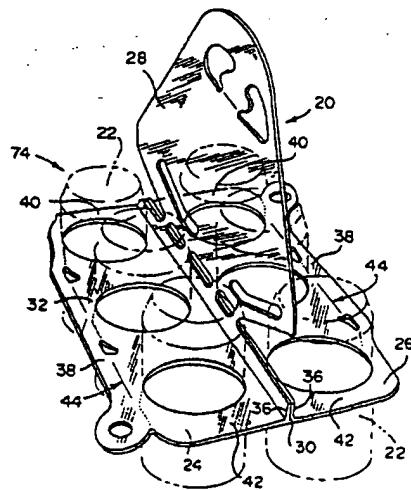
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(54) Container carrier

(57) A plastic carrier (20) for carrying a plurality of containers (22) includes a handle portion (40) of a single sheet of plastic material and a pair of container engaging portions (24,26) freely depending from the handle portion at a joint (30). Each engaging portion (24,26) has a plurality of apertures (34) therethrough for carrying an associated container (22). One of the engaging portions (26) is integrally formed with the handle portion (40) and the other engaging portion (24) is joined thereto at the joint (30). The carriers are preferably formed continuously. To form the carrier, first and second container engaging portions (24,26) and the handle portion (40) are stamped out of a single sheet or web of plastic material

(56), and zipper strips (44), if provided, are formed thereon, with the second engaging portion (26) and the handle portion (40) being directly connected together and the engaging portions (24,26) being directly connected together. Thereafter, the first engaging portion (24) is folded over onto the second engaging portion (26) along a fold line (64). The first and second engaging portions (24,26) are welded together along an edge (36) thereof opposite to the fold line (64). Next, the fold line (64) is severed. Finally, the completed carriers are collected onto a roll (72). A plurality of apertures (34) may be formed during the stamping step or may be stamped after the container engaging portions (24,26) are folded over onto each other.

FIG. 1



**Description**

This invention is generally directed to a plastic, top-lift carrier for carrying containers such as bottles, cans and the like. More particularly, the invention contemplates a plastic, top-lift carrier which has a handle portion a first and second container engaging portion attached to one another at a joint.

US-A-5,487,465, discloses a plastic carrier for carrying containers, such as cans, bottles and the like. The carrier is formed from two webs of plastic material juxtaposed over one another and stamping the handle portion and the container engaging portion out of the web simultaneously. The webs are heat sealed across the juncture between the handle portion and the container engaging portion to form a weld. The resulting handle portion has a double thickness and the container engaging portions freely depend from the handle portion. Because of the construction, the handle portion is of a double thickness which wastes material and the carrier portions must be symmetrical about the carrier centerline.

According to a first aspect of this invention a plastic carrier for carrying a plurality of containers comprising: a handle portion and a pair of container engaging portions freely depending from said handle portion at a joint, each of said plastic container engaging portions having a plurality of apertures therethrough for carrying an associated container; is characterised in that the handle portion is only single ply, and in that one of said container engaging portions is integrally formed with said handle portion and the other of said container engaging portions is joined to said handle portion at said joint.

In such a carrier the two container engaging portions need not necessarily be identical to one another and the handle portion may be printed on both sides. Preferably zipper strips are provided on both container engaging portions.

According to a second aspect of this invention a method of forming a carrier for use in carrying a plurality of containers comprises the steps of:

providing a single sheet or web of plastic material; stamping a first container engaging portion, a second container engaging portion and a handle portion out of said single sheet or web of plastic material, said first and second container engaging portions being directly connected together and said second container engaging portion and said handle portion being directly connected together; folding said first container engaging portion over onto said second container engaging portion along a fold line such that said first container engaging portion overlaps said second container engaging portion; welding said first container engaging portion and said second container engaging portion together along an edge thereof opposite to said fold line; separating said container engaging portions from

each other adjacent said fold line.

The carriers are preferably formed as a continuous array and then the completed carriers are collected onto a roll.

5 Zipper strips may be formed during the first stamping step or during the second stamping step. If it is desired that the zipper strips be dissimilar in construction, then the zipper strips must be formed during the first 10 stamping step while the container engaging portions are not folded over onto each other. If it is desired that the zipper strips be identical, then the zipper strips can be formed during either of the first or second stamping steps.

15 In addition, the carrier can be printed on by suitable means to print on one side of the handle portion and/or the container engaging portions or on both sides of the handle portion in registration and/or the container engaging portions in registration. This provides another 20 advantage over prior art carriers that cannot be easily printed on.

The resulting carrier has a handle portion of a single ply of plastic material which eliminates the second ply found in prior art carriers.

25 A particular embodiment of a carrier and its method of manufacture will now be described with reference to the accompanying drawings, wherein like reference numerals identify like elements, and in which:-

30 Figure 1 is a perspective view of a carrier shown surrounding a plurality of containers;  
Figure 2 is a top plan view of a stamped blank from which the carriers are formed;  
Figure 3 is a top plan view of a plurality of carriers after their two halves have been joined together; and,  
Figure 4 is a schematic view of the manufacturing process.

40 In Figure 1, a novel, top-lift carrier 20 which incorporates features of the present invention is shown. The carrier 20 is used for carrying containers 22, such as cans, bottles and the like.

The novel carrier 20 is formed from a first container 45 engaging portion 24 and a second container engaging portion 26, each of which freely depends from a handle portion 28 at a joint 30. The carrier 20 of the present invention is formed by a novel method as described herein. As a result of the method used to construct the carrier 20 of the present invention, the handle portion 28 can be pre-printed on both sides and also permits the design of the carrier 20 to have features that are not necessarily identical on each side of the centerline of the carrier 20.

55 The carrier 20 is made of a suitable flexible, resilient, stretchable material, such as plastic, preferably, low density polyethylene. The material is such that the carrier 20 can be stretched over the containers 22 by a

jaw stretching machine and can conform to the side walls of the containers 22. The carrier 20 may be applied to the containers 22 by known means, for example, by the jaw stretching machines disclosed in US-A-4,250,682 or US-A-3,204,386. The second container engaging portion 26 and the handle portion 28 are integrally formed out of the same ply of plastic material. The first container engaging portion 24 is formed from a second ply of plastic material as described herein and is joined to the ply having the second container engaging portion 24 and the handle portion 28 formed therein at the joint 30.

Each container engaging portion 24, 26 includes a plurality of annular rings or bands 32. The annular bands 32 define a plurality of shaped apertures 34 for securely holding the containers 22 therein. Each container engaging portion 24, 26 has a first, inner margin 36, a second, outer margin 38 opposite to said first margin 26 and opposite side margins 40, 42. The first margin 36 of the second container engaging portion 24 is integrally connected to the handle portion 28 as described herein.

Each second, outer margin 38 may have a zipper strip 44 thereon which may be formed in accordance with and is fully disclosed in EP-A-0792819. Because of the method used to form the novel carrier 20 of the present invention, the carrier 20 presents an improvement to the carrier disclosed in this specification as the design of the carrier 20 of the present invention permits it to have features that are not necessarily identical on each side of the carrier centerline as is necessary in the earlier case. For example, the design of this carrier 20 permits the zipper strip 44 to be designed to be opened from either the same direction on both sides of the carrier 20 or different directions on each side of the carrier 20. This carrier 20 also permits a UPC flap (not shown) to be on one second, outer margin 38 of one container engaging portion, for example, the first container engaging portion 24, and not on the second, outer margin 38 of, for example, the second container engaging portion 26.

A preferred embodiment of the handle portion 28 has a body portion 46 having grasping means 48, shown as a pair of apertures and an elongated slit therebetween, provided through an upper portion of the body portion 46 proximate one edge of the body portion 46 so that a user's hand can be inserted through the grasping means 48 to grasp the handle portion 28. Also, in a preferred embodiment, a plurality of spaced bridge portions 50 are provided on the opposite edge of the body portion 46 and integrally connect the second container engaging portion 26 thereto. In addition, a plurality of openings 52 are formed through the body portion 46, one of each being between adjacent bridge portions 50.

In finished form, the first and second container engaging portions 24, 26 are connected or joined together by a continuous seam or joint 30 along the first, inner margins 36 of each container engaging portion 24, 26. The joint 30 runs the length of the container engaging

portions 24, 26 and the container engaging portions 24, 26 freely depend from the joint 30. When the carrier 20 is not assembled with containers 22, the carrier 20 is flat and the joint 30 lies in generally the same plane as the container engaging portions 24, 26. The joint 30 projects generally perpendicular to the plane of the container engaging portions 24, 26 when the carrier 20 is assembled with containers 22.

Now that the specifics of the carrier 20 have been described, a general description of the method for making the carrier 20 is described. The method for making the carrier 20 is schematically illustrated in Figure 4 in a simplified form.

The carrier 20 is preferably formed continuously. A roll 54 of plastic material provides a web 56 to form the carrier 20. The web 56 may be made of a natural, tinted or pigmented color.

Initially, the web of material 56 is printed on by a suitable printing means 58. The web 56 can be printed on one side or both sides thereof in registration so as to provide printing on one or both sides of the handle portion 28 and/or the container engaging portions 24, 26.

The web 56 is then stamped or punched by a first punch press die 60 of known construction, to form continuous strips of the flat, partially completed carrier 20 as shown in Figures 2 and 4. After being stamped or punched by the punch press die 60, the handle portion 28 is completely formed such that the body portion 46, having the grasping means 48 and apertures 52 formed therein, and the bridge portions 50 are formed. The second container engaging portion 26 is formed with the exception of the apertures 34 and is integrally connected to the bridge portions 50 at the first margin 36 thereof.

The first container engaging portion 24 is formed with the exception of the apertures 34 and its second margin 38 is integrally connected to the second margin 38 of the second container engaging portion 26 by means of a bridge portion 62. The bridge portion 62 preferably has an elongated slot 64 punched through approximately the center of the bridge portion 62 at the same time it is formed. In addition, the features of the zipper strips 44 are formed on each second margin 38 of each container engaging portion 24, 26. Because the zipper strips 44 are stamped into the carrier 20 while it is flat, the zipper strips 44 may be dissimilar in construction or may be like in construction. In addition, any combination of UPC flaps or opening features can be designed into the container engaging portion 24. After the punch press step, each carrier 20 is integrally connected to the adjacent carrier 20 at the sides thereof.

Next, the first container engaging portion 24 is folded over onto the second container engaging portion 26 by suitable, known means and overlapped onto the second container engaging portion 26 such that the first margins 36 align with each other. The handle portion 28 is not overlapped by the first container engaging portion 24. The first container engaging portion 24 is folded over onto the second container engaging portion 26 along

fold line 66 which aligns with slot 64. The slot 64 aids in folding the plastic material from which the carrier 20 is made.

Subsequently, the first margins 36 of the first and second container portions 24, 26 are joined or welded along the length thereof by suitable means, such as heat sealing, to form joint 30. The heat sealing may be done by conventional, known methods, such as by a heated roller 68. It should also be recognized that in some cases, a strip of heat sensitive or pressure sensitive adhesive may be inserted at desired locations between the container engaging portions 24, 26 to secure the first margins 36 together.

Thereafter, the flat, folded carrier 20 is passed under a second punch press die 70. During this step, the apertures 34 are punched through both the first and second container engaging portions 24, 26 simultaneously and the bridge portion 62 is severed from the second margins 38 of the container engaging portions 24, 26. When the bridge portion 62 is severed therefrom, the container engaging portions 24, 26 are no longer connected to each other and can be freely moved away from each other.

While the preferred method includes punching apertures 34 in a second punch press step to ensure accurate registration of such apertures 34, the apertures 34 could be created during the first punch step with careful alignment of the apertures prior to the heat sealing step.

The flat, continuous web of completed carriers 20 are then collected on a roll 72 or otherwise appropriately stored until they are to be applied to containers by known methods.

It is to be understood that variations on the method for forming the carrier 20 may be performed. For example, the printing may be done after the first punch press die 60 has punched the web 56. In addition, the first punch press die 60 can be used to form the apertures 34. Alternatively, the second punch press die 70 can be used to form the zipper strips 44, but this will form identical zipper strips on each side of the carrier 20 as the zipper strips would be punched simultaneously through both of the container engaging portions 24, 26.

To use the carrier 20 to carry containers 22 and form a package 74 as shown in Figure 1, an individual carrier 20 is separated from the roll 72 by suitable means. The container engaging portions 24, 26 are pivoted so as to be generally perpendicular to the handle portion 28 and are then stretched over the containers 22 using known means. To carry the package 70, the handle portion 28 extends upwardly between the rows of containers 22 and is generally perpendicular to the container engaging portions 24, 26 of the carrier 20.

#### Claim

1. A plastic carrier (20) for carrying a plurality of con-

ainers comprising: a handle portion (40) and a pair of container engaging portions (24,26) freely depending from said handle portion (40) at a joint (30), each of said plastic container engaging portions (24,26) having a plurality of apertures (34) therethrough for carrying an associated container; characterised in that the handle portion (40) is only single ply, and in that one of said container engaging portions (26) is integrally formed with said handle portion (40) and the other (24) of said container engaging portions is joined to said handle portion (40) at said joint (30).

2. A carrier according to claim 1, wherein each of said container engaging portions (24,26) has an outer margin (38) and further has a zipper strip (44) on each said outer margin (38) for releasing containers held within said apertures (34) in said container engaging portion (24,26).
3. A carrier according to claim 2, wherein said zipper strips (44) in each container engaging portion (24,26) are dissimilar in construction.
4. A carrier according to any one of the preceding claims, wherein said handle portion (40) is printed on both sides.
5. A method of forming a carrier (20) for use in carrying a plurality of containers comprising the steps of:  
providing a single sheet or web of plastic material (56);  
stamping a first container engaging portion (24), a second container engaging portion (26) and a handle portion (40) out of said single sheet or web of plastic material (56), said first and second container engaging portions (24,26) being directly connected together and said second container engaging portion (26) and said handle portion (40) being directly connected together;  
folding said first container engaging portion (24) over onto said second container engaging portion (26) along a fold line (64) such that said first container engaging portion (24) overlaps said second container engaging portion (26);  
welding said first container engaging portion (24) and said second container engaging portion (26) together along an edge (36) thereof opposite to said fold line (64);  
separating said container engaging portions (24,26) from each other adjacent said fold line (64).
6. A method according to claim 5, wherein a plurality of carriers (20) are formed continuously such that each carrier is joined to adjacent carriers.

7. A method according to claim 6, further including the step of collecting said completed carriers (20) onto a roll (72).
8. A method as defined in claim 5, 6 or 7 wherein during said step of stamping said container engaging portions (24,26) and said handle portion (40), a zipper strip (44) is formed on each container engaging portion along an edge (38) which is proximate to the subsequently formed fold line (64).  
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9. A method according to claims 5, 6, 7 or 8 wherein during said step of stamping said container engaging portions (24,26) and said handle portion (40), a plurality of apertures (34) are stamped in each carrier engaging portion (24,26).  
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10. A method according to claim 5, 6, 7, 8 or 9, further including the step of stamping a plurality of apertures (39) through said overlapped container engaging portions (24,26).  
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FIG. 1

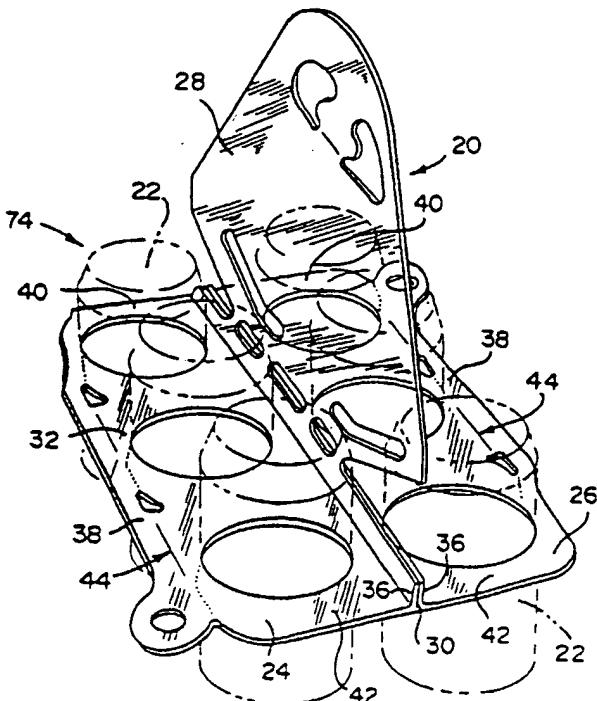
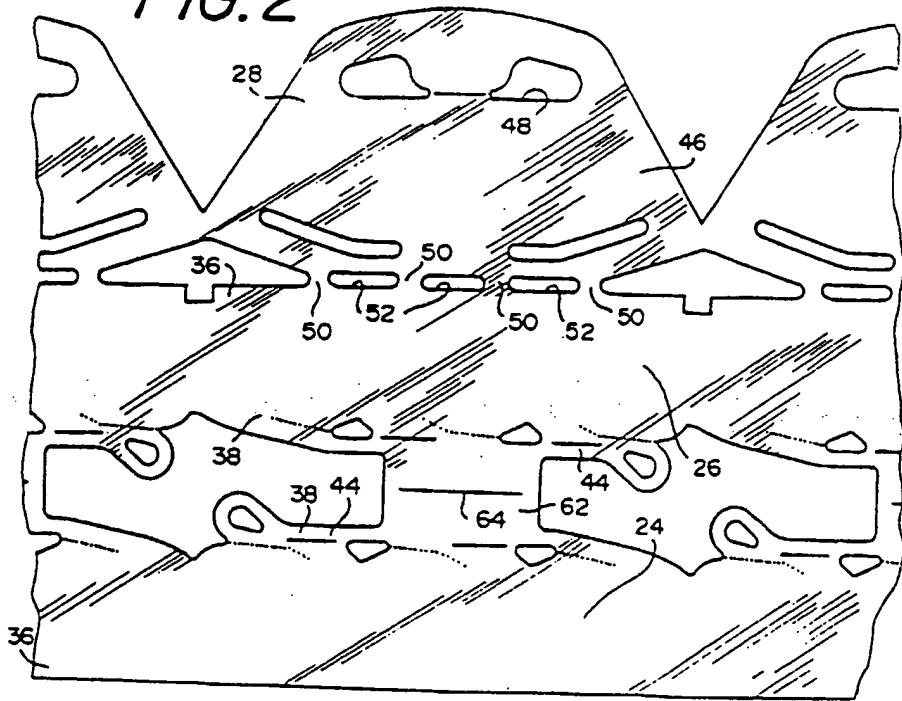
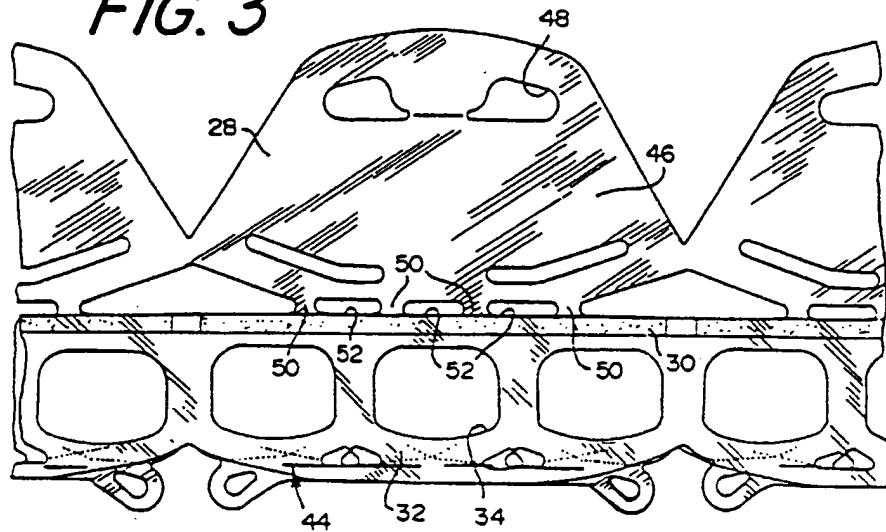


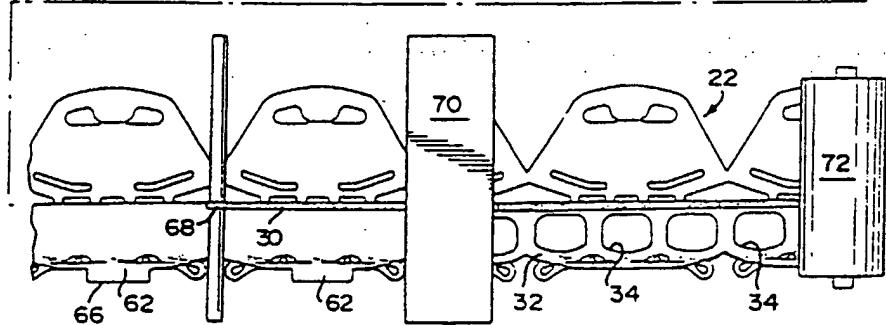
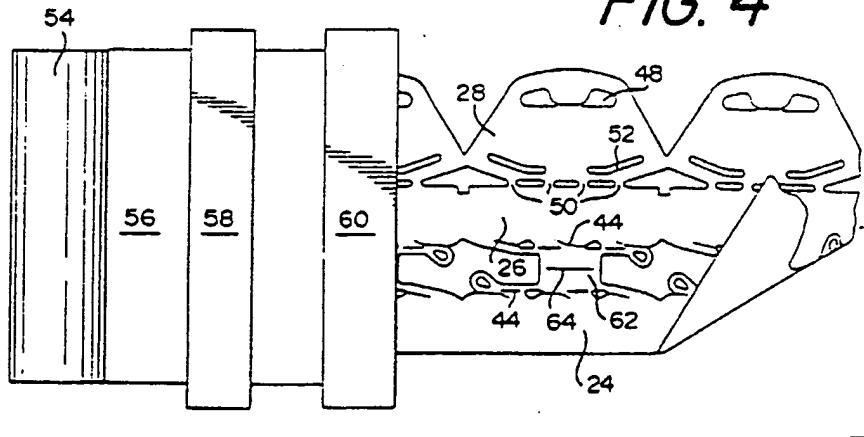
FIG. 2



*FIG. 3*



*FIG. 4*





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## EUROPEAN SEARCH REPORT

Application Number

EP 97 30 9042

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)
D,P, A	EP 0 792 819 A (ILLINOIS TOOL WORKS)  * page 3, column 3, line 1 - page 5, column 7, line 54 * * figures 1-3 *	1-10	B65D71/50
D,A	US 5 487 465 A (BROSKOW JAMES A)  * column 2, line 28 - column 5, line 2 * * figures 1-5 *	1-10	
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TECHNICAL FIELDS SEARCHED (Int.Cl.)			
B65D B65B			
The present search report has been drawn up for all claims			
Place of search  EPO FORM 1503 03/82 (PMD/CDI)	Date of completion of the search  16 February 1998	Examiner  Farizon, P	
CATEGORY OF CITED DOCUMENTS			
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